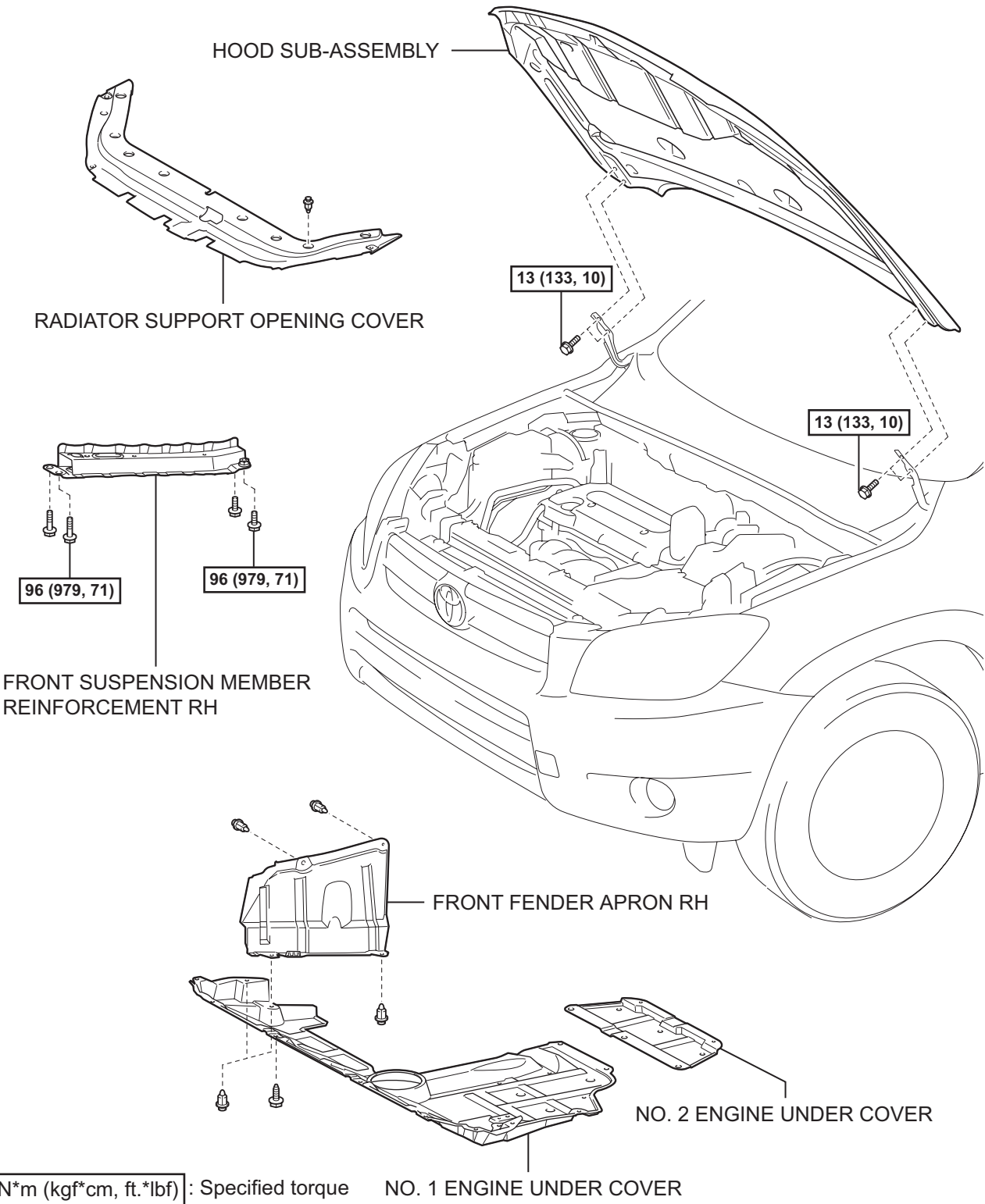
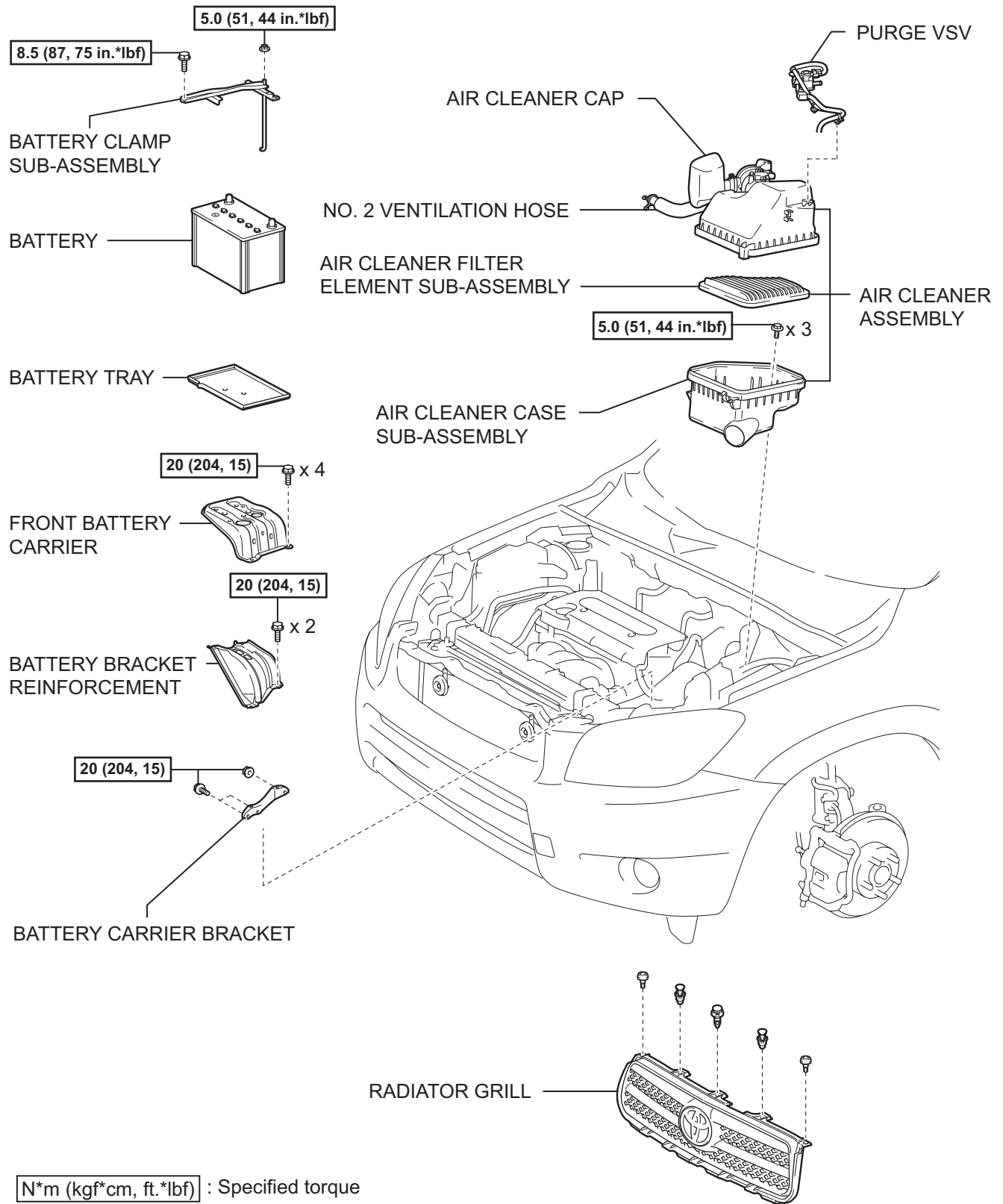
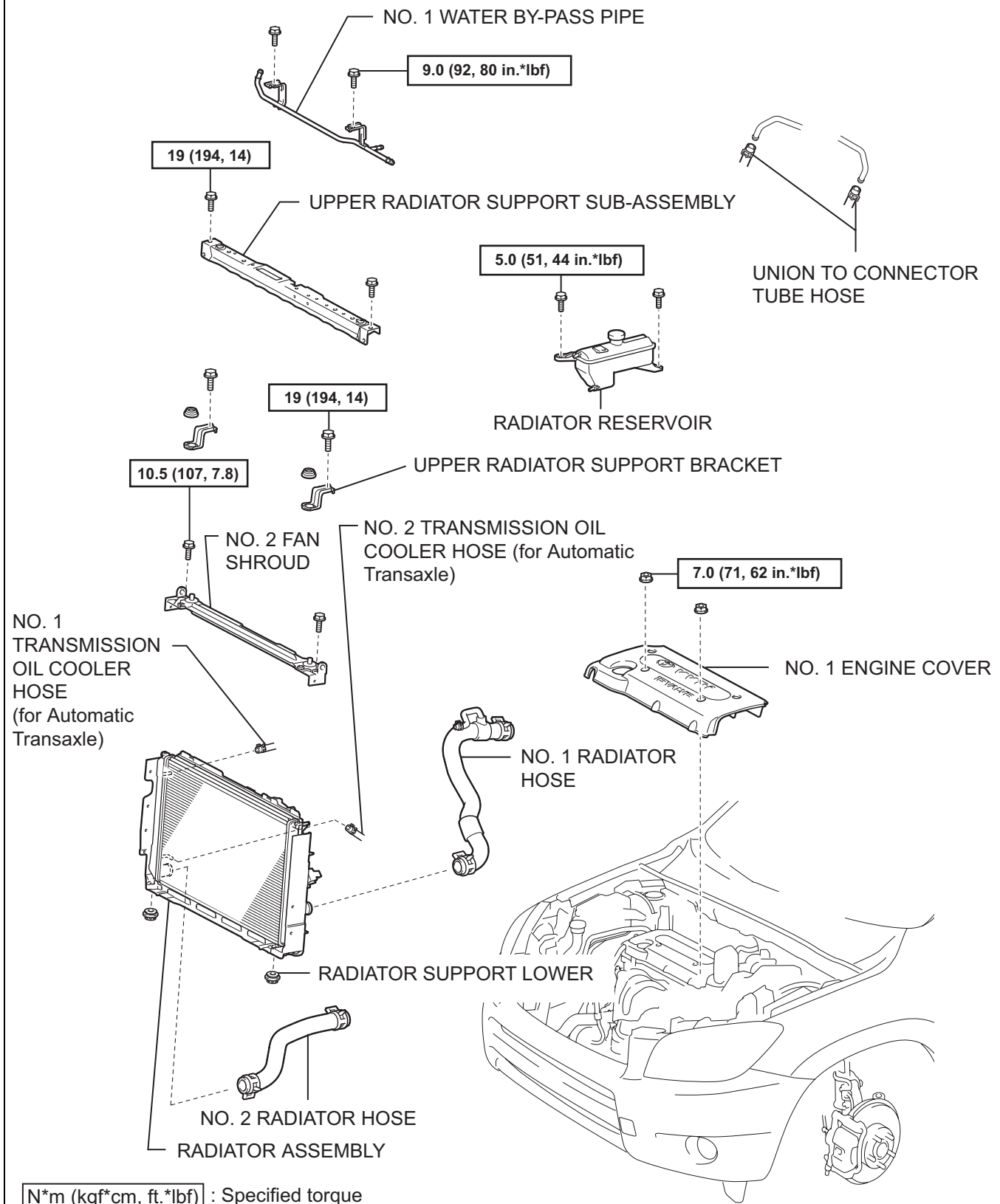


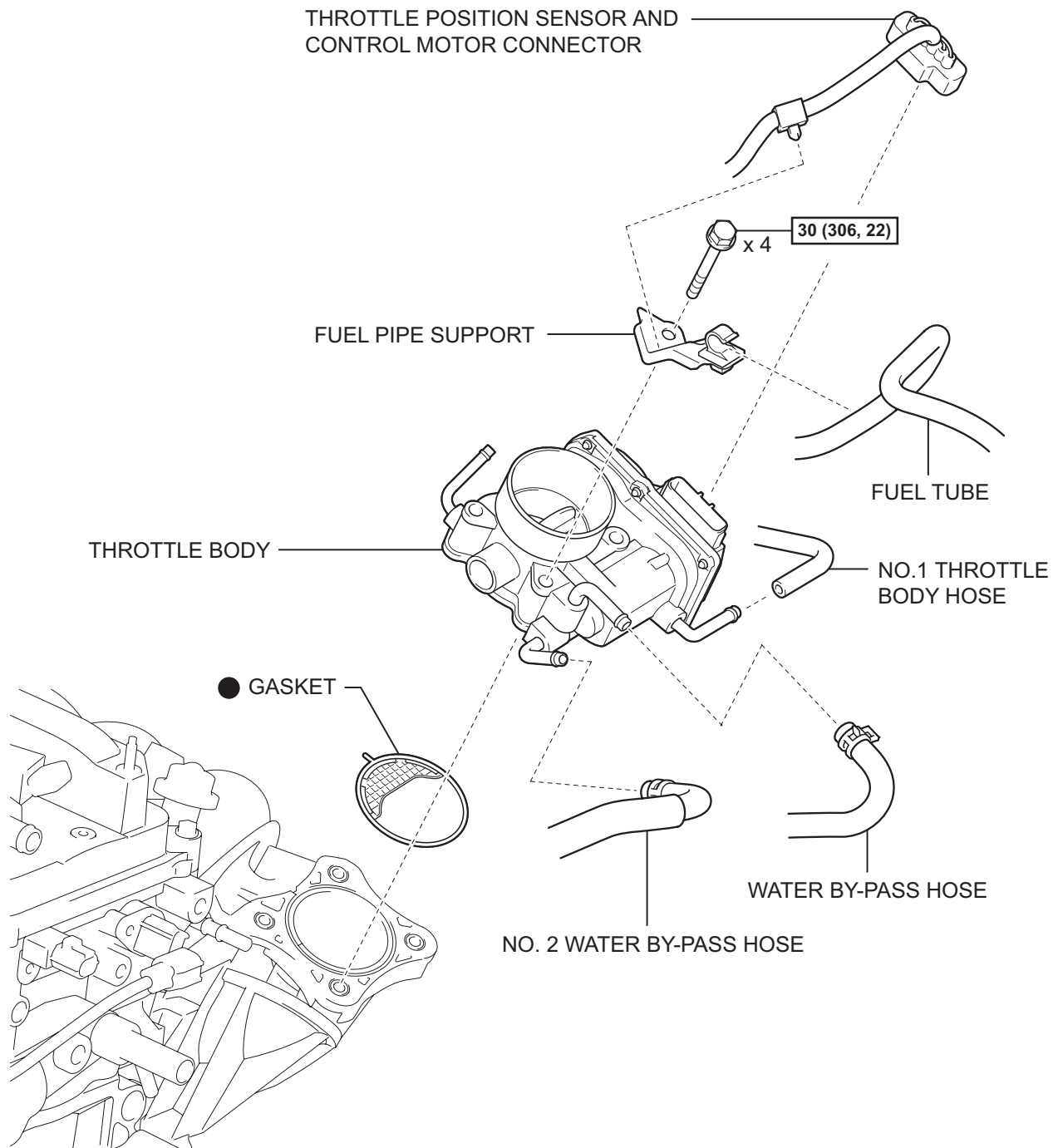
ENGINE ASSEMBLY
COMPONENTS

EM









EM

CAMSHAFT TIMING OIL CONTROL VALVE CONNECTOR

FUEL INJECTOR CONNECTOR

FUEL DELIVERY PIPE SUB-ASSEMBLY

20 (204, 15)

x 2

FUEL TUBE

x 4

● INJECTOR VIBRATION INSULATOR

FUEL TUBE CLAMP

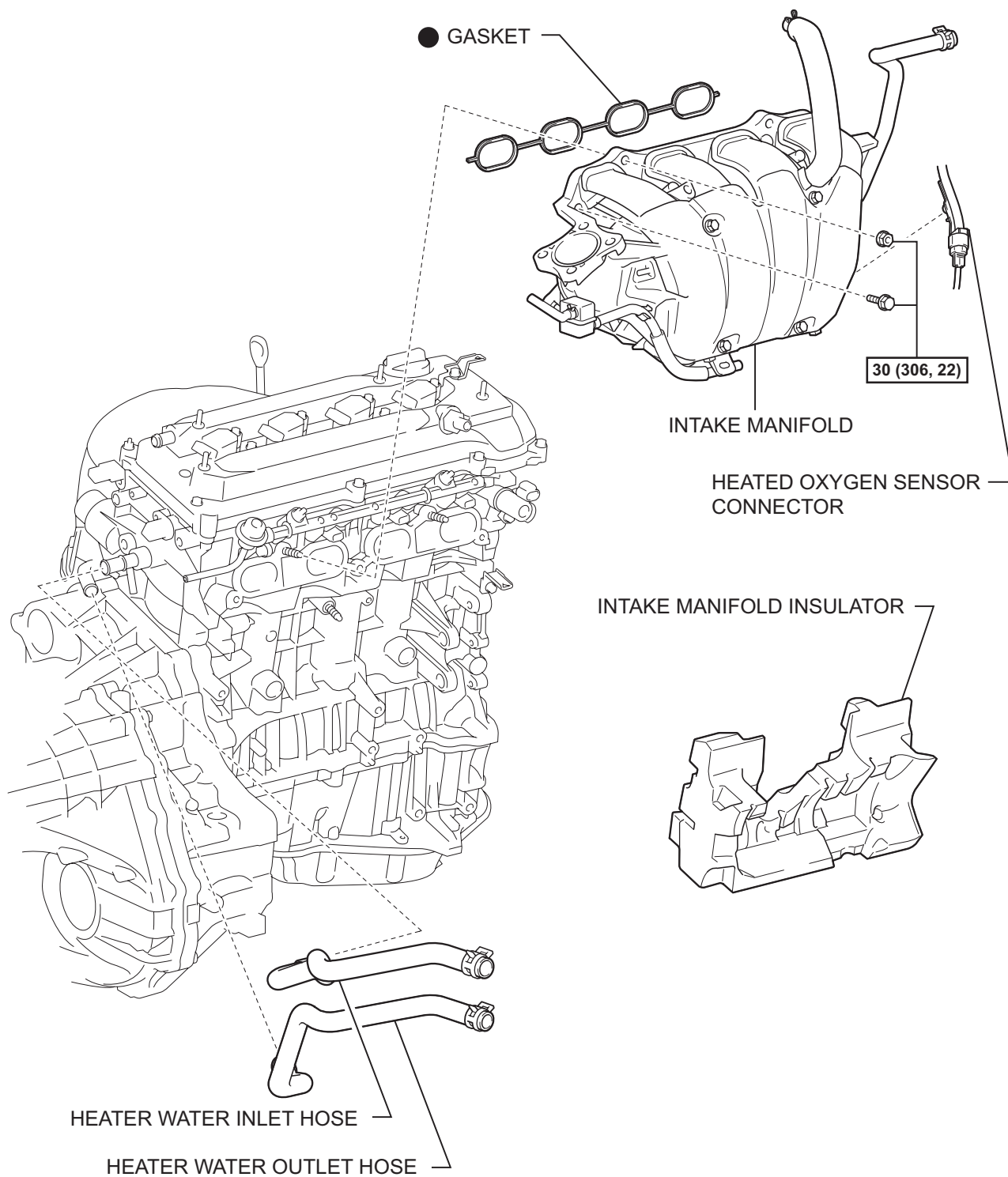
x 2

NO. 1 DELIVERY PIPE SPACER

NO. 2 VENTILATION HOSE

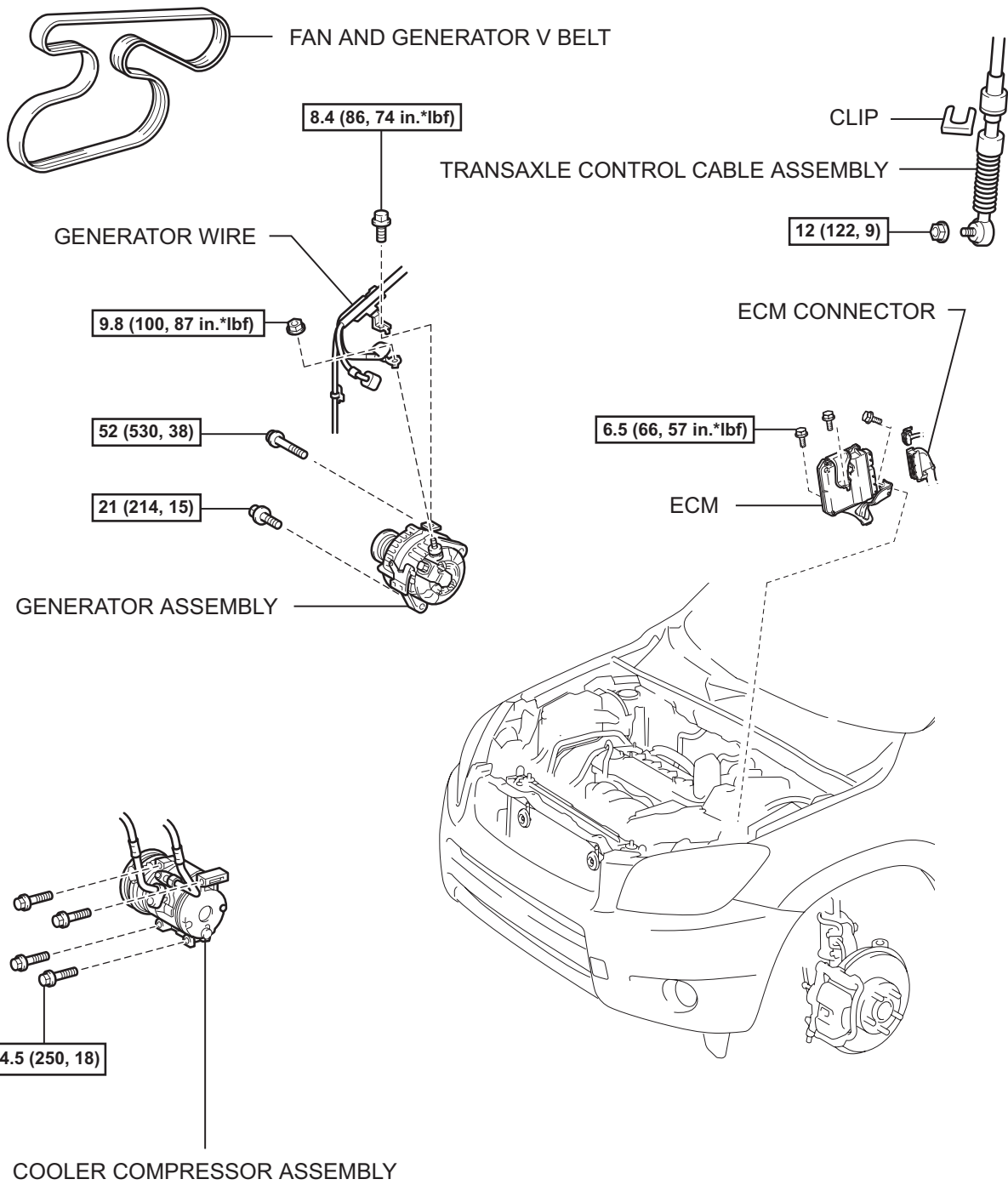
N*m (kgf*cm, ft.*lbf) : Specified torque

● Non-reusable part

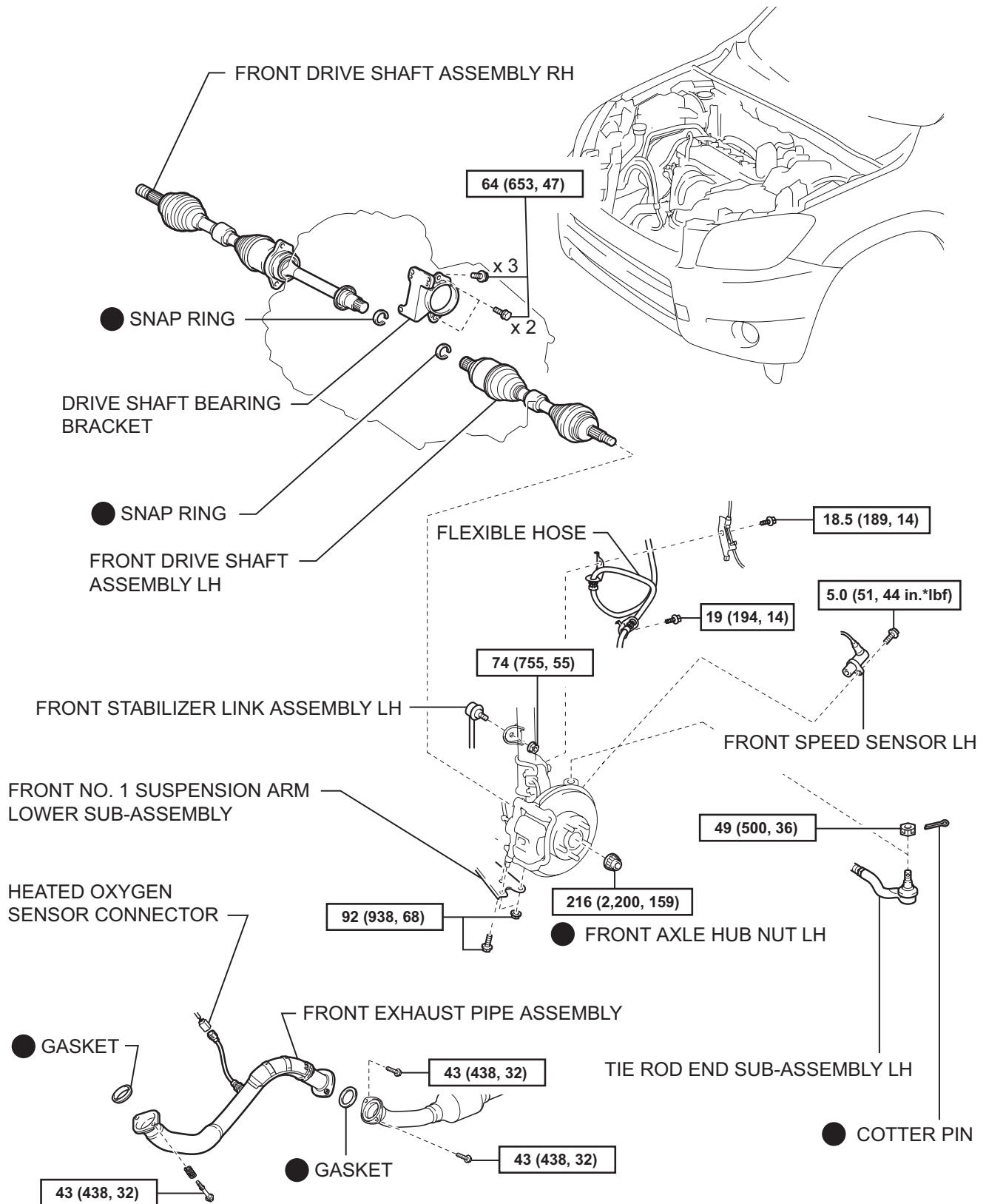


N*m (kgf*cm, ft.*lbf) : Specified torque

● Non-reusable part



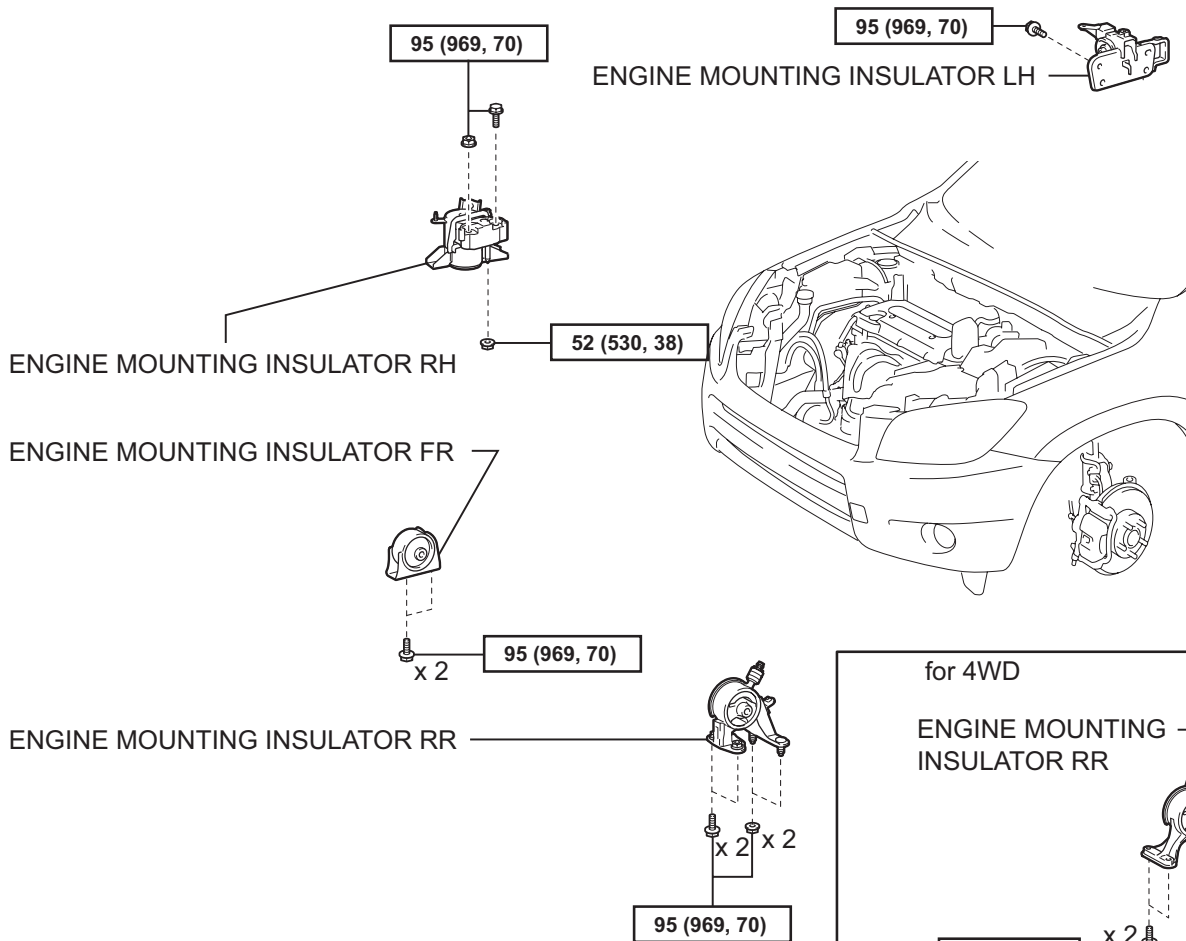
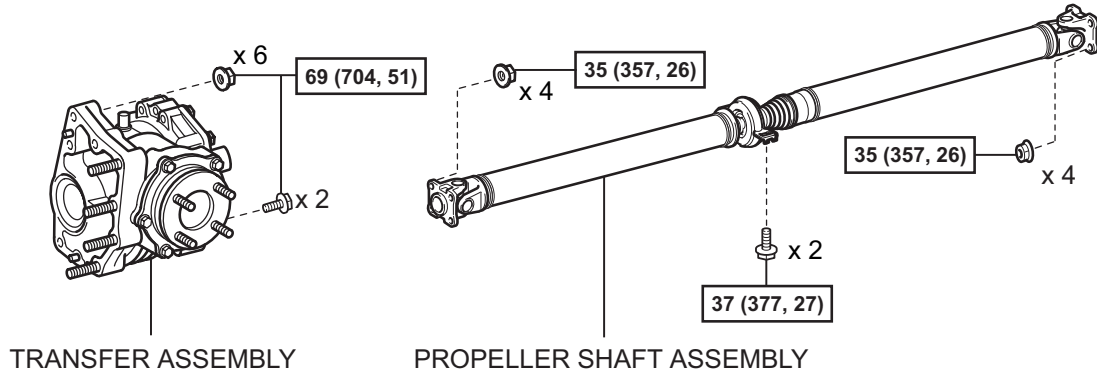
N*m (kgf*cm, ft.*lbf) : Specified torque



N*m (kgf*cm, ft.*lbf) : Specified torque

● Non-reusable part

for 4WD



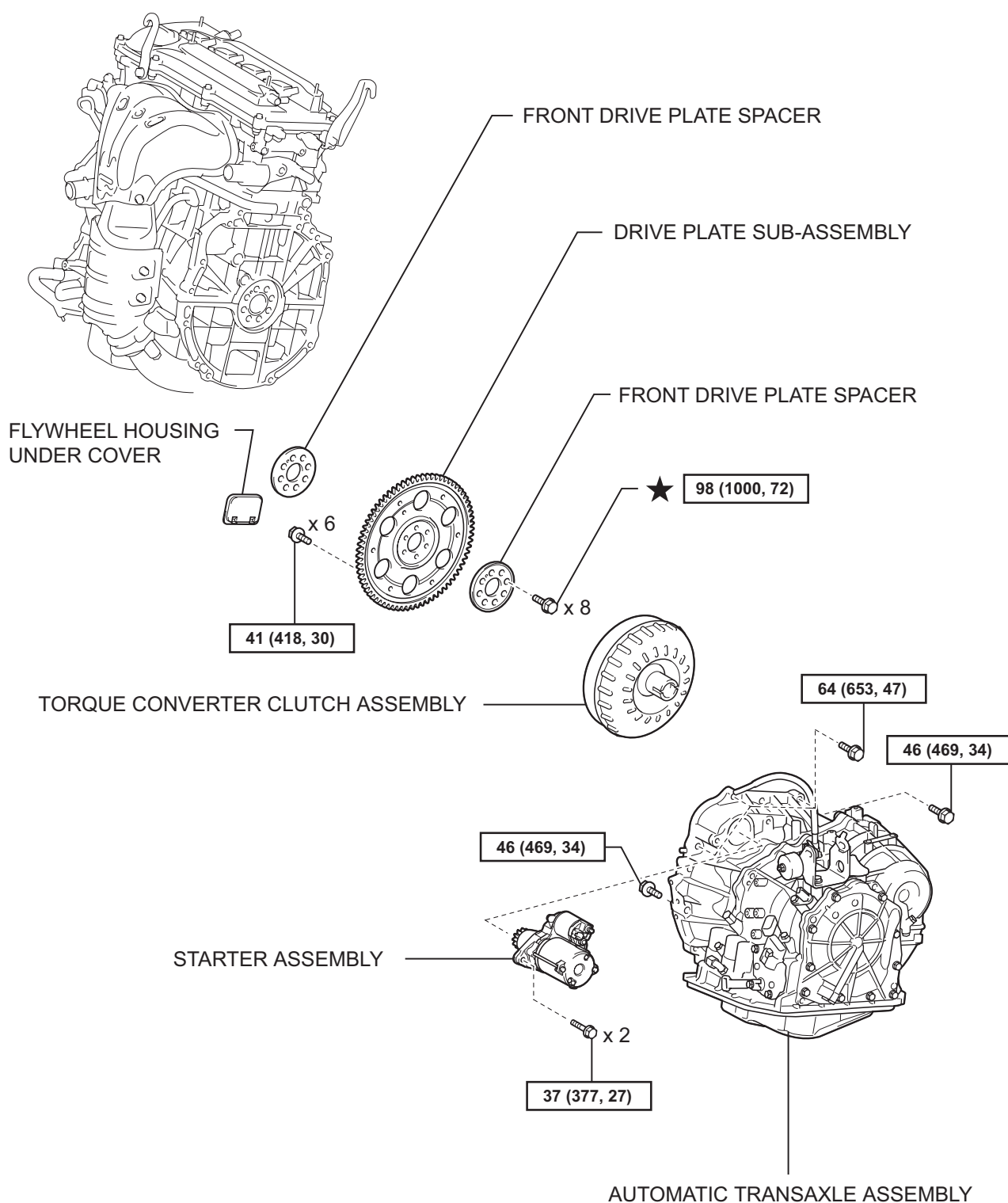
for 4WD

ENGINE MOUNTING INSULATOR RR

95 (969, 70)

x 2 x 2

N*m (kgf*cm, ft.*lbf) : Specified torque

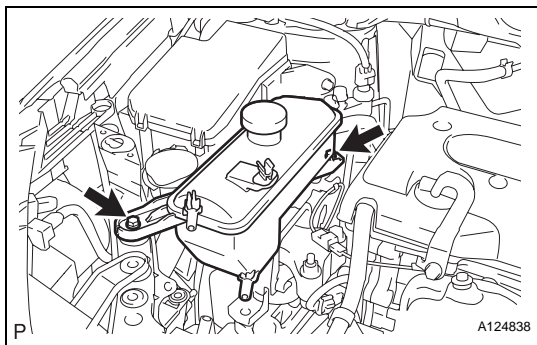


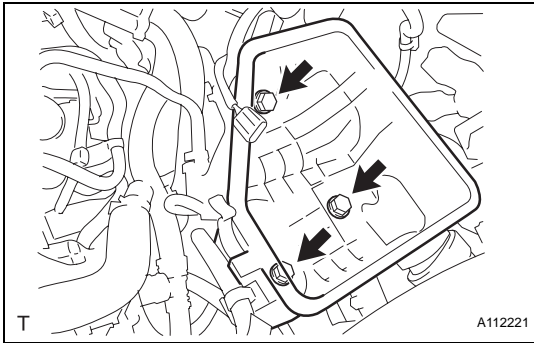
N*m (kgf*cm, ft.*lbf) : Specified torque

★ Precoated part

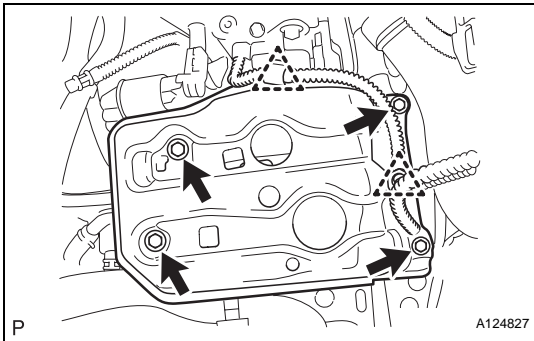
REMOVAL

1. **DISCHARGE FUEL SYSTEM PRESSURE** (See page [FU-9](#))
2. **DISCONNECT CABLE FROM NEGATIVE BATTERY TERMINAL**
CAUTION:
Wait at least 90 seconds after disconnecting the cable from the negative (-) battery terminal to prevent airbag and seat belt pretensioner activation.
3. **REMOVE HOOD SUB-ASSEMBLY** (See page [ED-4](#))
4. **REMOVE RADIATOR SUPPORT OPENING COVER**
5. **REMOVE BATTERY CLAMP SUB-ASSEMBLY**
(a) Loosen the bolt and nut, and remove the battery clamp.
6. **REMOVE BATTERY**
7. **REMOVE BATTERY TRAY**
8. **REMOVE FRONT WHEEL**
9. **REMOVE NO. 1 ENGINE UNDER COVER**
10. **REMOVE NO. 2 ENGINE UNDER COVER**
11. **REMOVE FRONT FENDER APRON RH**
12. **REMOVE NO. 1 ENGINE COVER** (See page [EM-22](#))
13. **DRAIN ENGINE COOLANT** (See page [CO-6](#))
14. **DRAIN AUTOMATIC TRANSAXLE FLUID**
(a) Drain automatic transaxle fluid for U241E (2WD) (see page [AX-146](#)).
(b) Drain automatic transaxle fluid for U140F (4WD) (see page [AX-147](#)).
15. **REMOVE RADIATOR ASSEMBLY**
(a) Remove the radiator (see page [CO-29](#)).
16. **REMOVE RADIATOR RESERVOIR**
(a) Remove the 2 bolts and reservoir.
17. **REMOVE PURGE VSV** (See page [EC-15](#))
18. **REMOVE AIR CLEANER CAP** (See page [ES-411](#))
19. **REMOVE AIR CLEANER FILTER ELEMENT SUB-ASSEMBLY**

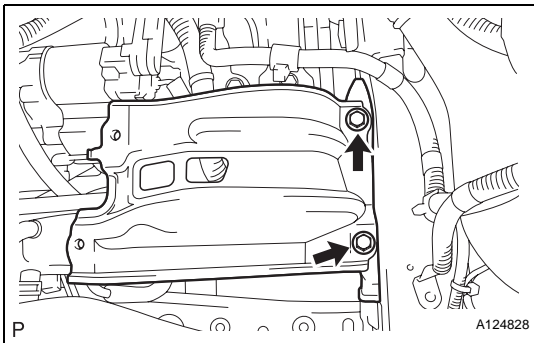


**20. REMOVE AIR CLEANER CASE SUB-ASSEMBLY**

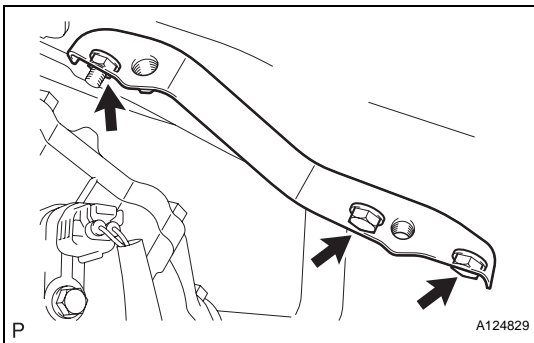
- (a) Remove the 3 bolts from the air cleaner case.
- (b) Disconnect the case from the NO. 1 air cleaner inlet.

**21. REMOVE FRONT BATTERY CARRIER**

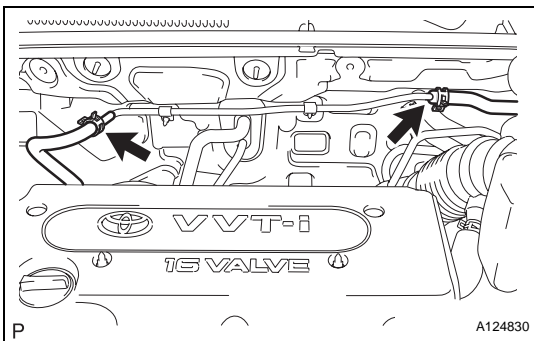
- (a) Disconnect the 2 clamps of the engine wire.
- (b) Remove the 4 bolts and front battery carrier.

**22. REMOVE BATTERY BRACKET REINFORCEMENT**

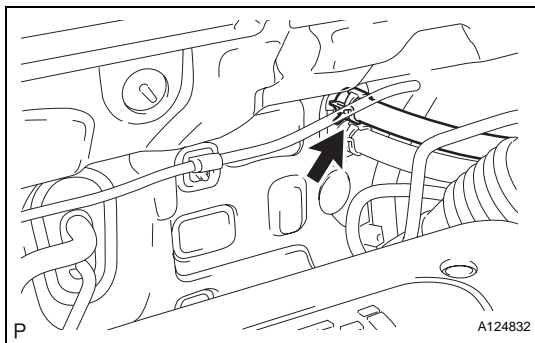
- (a) Remove the 2 bolts and battery bracket reinforcement.

**23. REMOVE BATTERY CARRIER BRACKET**

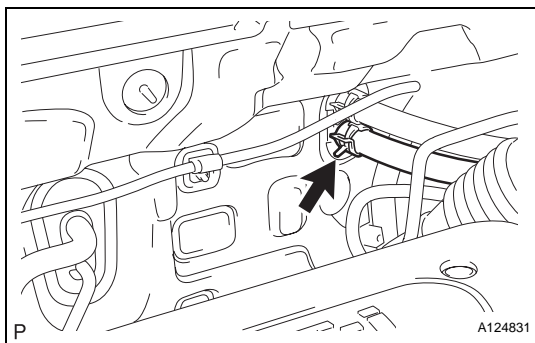
- (a) Remove the 2 bolts, nut and battery carrier bracket.

**24. DISCONNECT UNION TO CONNECTOR TUBE HOSE**

- (a) Disconnect the 2 union to connector tube hoses from the booster vacuum tube.

**25. DISCONNECT HEATER WATER INLET HOSE**

- (a) Disconnect the heater water inlet hose from the heater unit.

**26. DISCONNECT HEATER WATER OUTLET HOSE**

- (a) Disconnect the heater water outlet hose from the heater unit.

27. DISCONNECT FUEL TUBE (See page [FU-10](#))**28. REMOVE THROTTLE BODY (See page [ES-412](#))****29. DISCONNECT NO. 2 VENTILATION HOSE (See page [FU-10](#))****30. REMOVE FUEL DELIVERY PIPE SUB-ASSEMBLY (See page [FU-10](#))****31. REMOVE INTAKE MANIFOLD (See page [ES-419](#))****32. REMOVE INTAKE MANIFOLD INSULATOR (See page [ES-420](#))****33. REMOVE TRANSAXLE CONTROL CABLE ASSEMBLY**

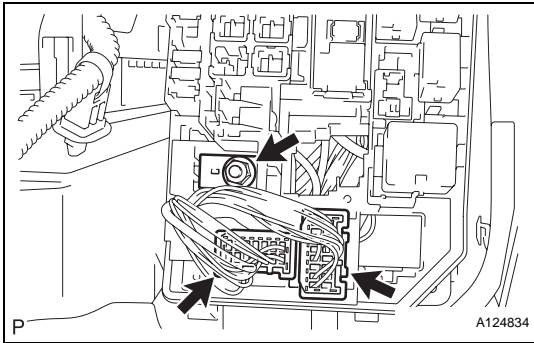
- (a) Remove the transaxle control cable for U241E (2WD) (see page [AX-129](#)).
- (b) Remove the transaxle control cable for U140F (4WD) (see page [AX-129](#)).

34. REMOVE FRONT SUSPENSION MEMBER REINFORCEMENT RH (See page [EM-6](#))**35. REMOVE FAN AND GENERATOR V BELT (See page [EM-6](#))****36. REMOVE GENERATOR ASSEMBLY (See page [CH-9](#))****37. REMOVE COOLER COMPRESSOR ASSEMBLY**

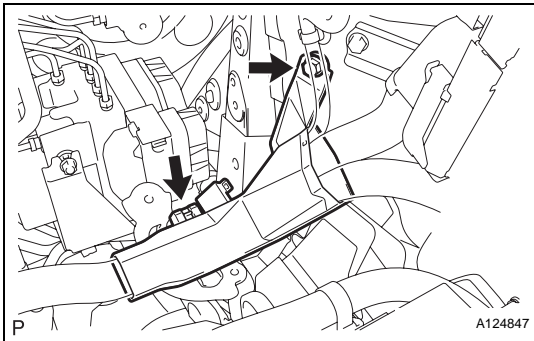
- (a) Remove the cooler compressor (see page [AC-216](#)).
- HINT:
Disconnect the compressor together with the low-pressure and high-pressure hoses, then secure it to the vehicle side using rope.

38. REMOVE ECM (See page [ES-429](#))**39. DISCONNECT ENGINE WIRE**

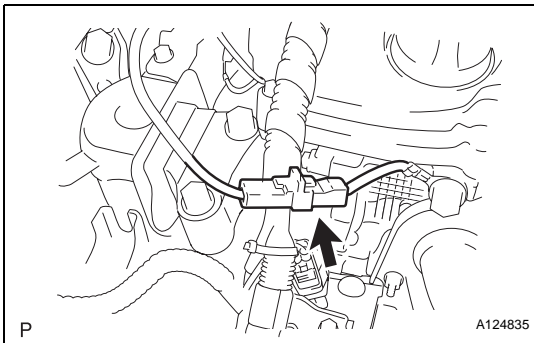
- (a) Remove the engine room relay block cover.



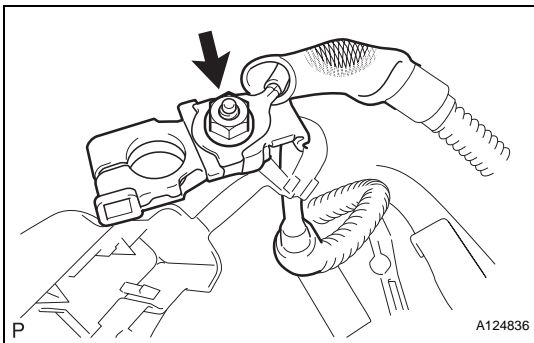
- (b) Remove the nut and disconnect the 2 engine wire connectors.



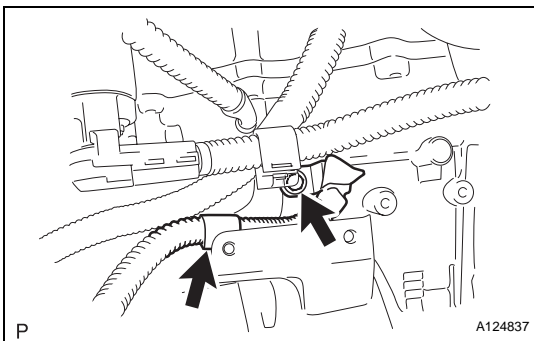
- (c) Remove the bolt and engine wire cover. Then disconnect the engine wire from the engine wire cover.



- (d) Disconnect the ground cable connector.



- (e) Remove the nut from the positive (+) battery terminal to disconnect the engine wire.



- (f) Disconnect the ground cable from the clamp located near the starter.
(g) Remove the bolt and ground cable located near the starter.

40. REMOVE FRONT EXHAUST PIPE ASSEMBLY (See page [EX-3](#))

41. REMOVE FRONT DRIVE SHAFT ASSEMBLY

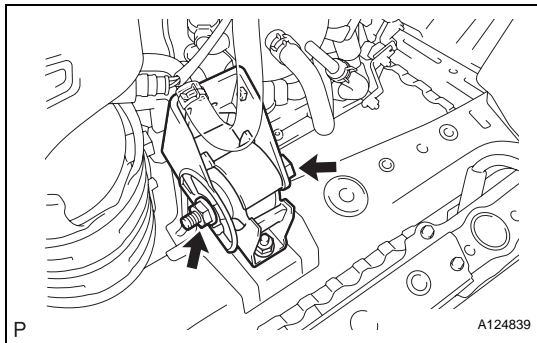
- (a) Remove the front drive shaft (for 2WD) (see page [DS-7](#)).

- (b) Remove the front drive shaft (for 4WD) (see page [DS-40](#)).

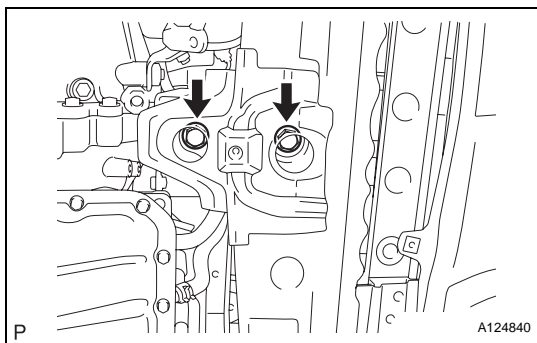
42. REMOVE PROPELLER SHAFT ASSEMBLY (for 4WD)
(See page [PR-3](#))

43. REMOVE ENGINE MOUNTING INSULATOR FR

- (a) Remove the through bolt and nut.

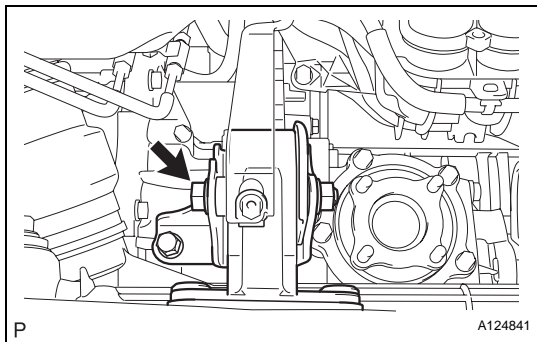


- (b) Remove the 2 bolts and engine mounting insulator FR.

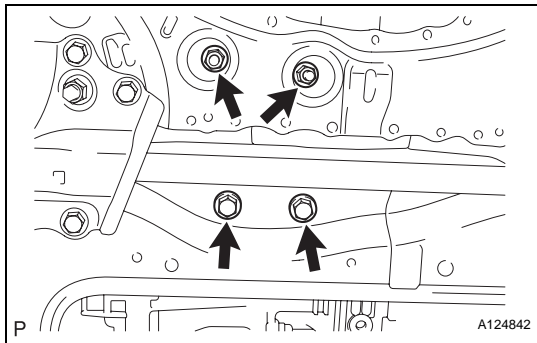


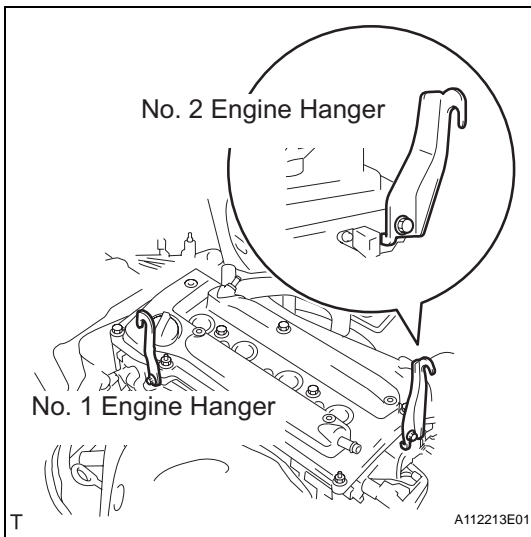
44. REMOVE ENGINE MOUNTING INSULATOR RR

- (a) Remove the through bolt.



- (b) Remove the 2 nuts, 2 bolts and engine mounting insulator RR.



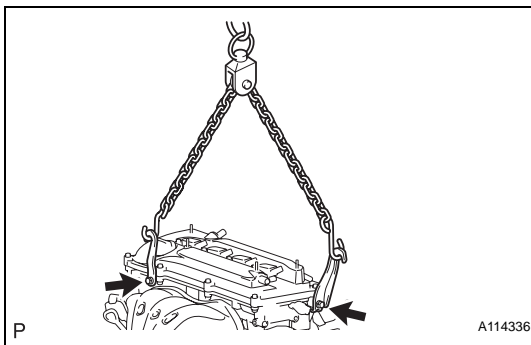
**45. REMOVE ENGINE ASSEMBLY WITH TRANSAXLE**

- (a) Install the No. 1 and No. 2 engine hangers with the bolts as shown in the illustration.

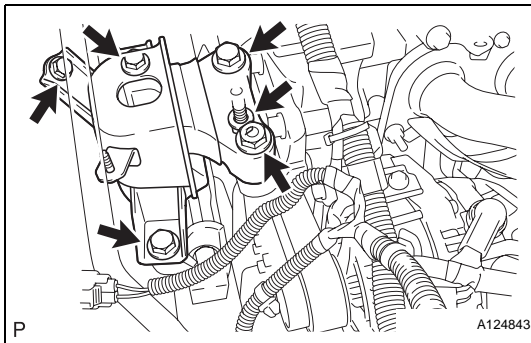
Torque: 38 N*m (387 kgf*cm, 28 ft.*lbf)

Part No.

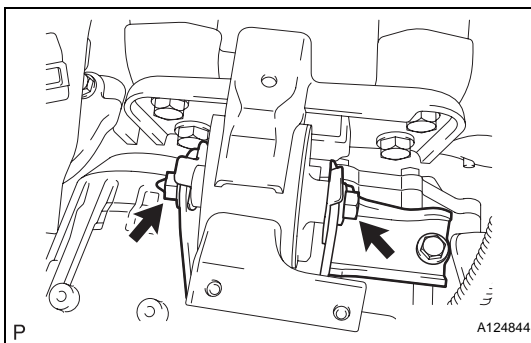
Item	Part No.
No. 1 engine hanger	12281-28010
No. 2 engine hanger	12282-28010
Bolt	91512-61020



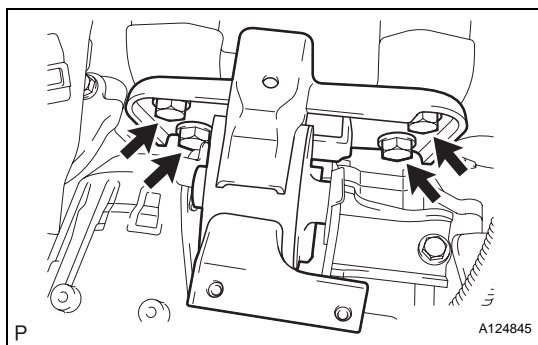
- (b) Attach the sling device to the engine hangers and chain block.
- (c) Carefully remove the engine with transaxle from the vehicle.

**46. REMOVE ENGINE MOUNTING INSULATOR RH**

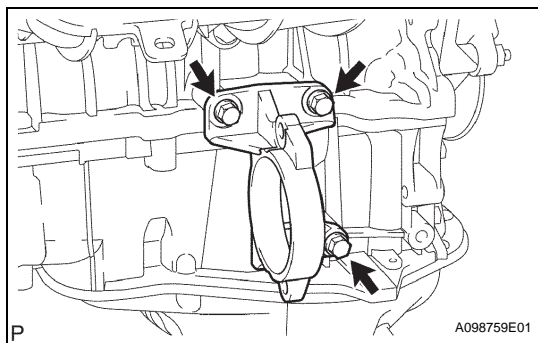
- (a) Remove the 2 nuts, 4 bolts and engine mounting insulator RH.

**47. REMOVE ENGINE MOUNTING INSULATOR LH**

- (a) Remove the through bolt and nut.

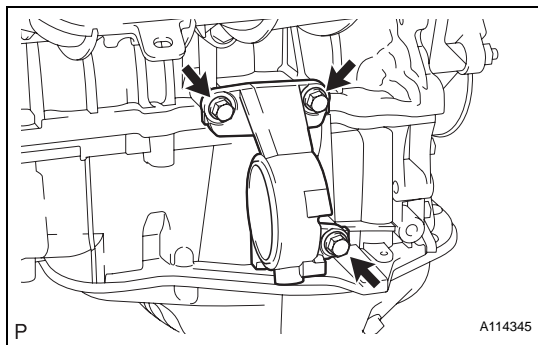


- (b) Remove the 4 bolts and engine mounting insulator LH.



48. REMOVE DRIVE SHAFT BEARING BRACKET (for 2WD)

- (a) Remove the 3 bolts and bracket.



49. REMOVE DRIVE SHAFT BEARING BRACKET (for 4WD)

- (a) Remove the 3 bolts and bracket.

50. REMOVE TRANSFER ASSEMBLY (for 4WD) (See page [TF-59](#))

51. REMOVE STARTER ASSEMBLY (See page [ST-7](#))

52. REMOVE AUTOMATIC TRANSAXLE ASSEMBLY

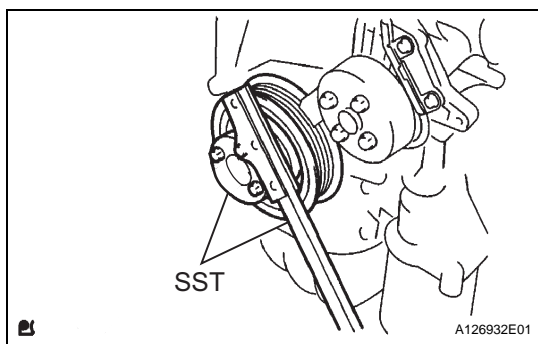
- (a) Remove the automatic transaxle for U241E (2WD) (see page [AX-147](#)).
 (b) Remove the automatic transaxle for U140F (4WD) (see page [AX-148](#)).

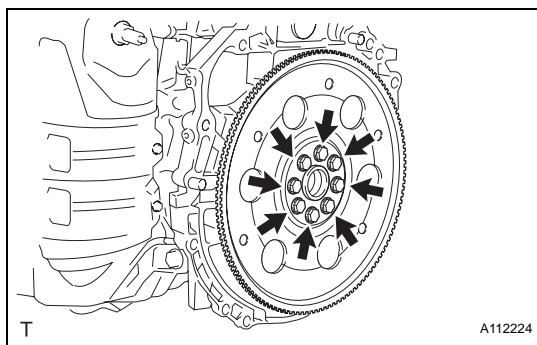
53. REMOVE TORQUE CONVERTER CLUTCH ASSEMBLY

- (a) Remove the torque converter clutch for U241E (2WD) (see page [AX-148](#)).
 (b) Remove the torque converter clutch for U140F (4WD) (see page [AX-149](#)).

54. REMOVE DRIVE PLATE SUB-ASSEMBLY

- (a) Using SST, hold the crankshaft.
SST 09213-54015 (91651-60855), 09330-00021





- (b) Remove the 8 bolts, rear spacer, drive plate and front spacer.

INSTALLATION

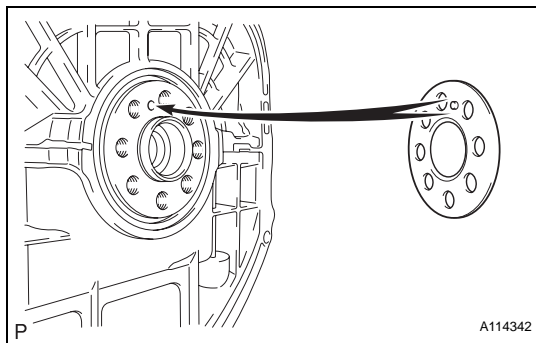
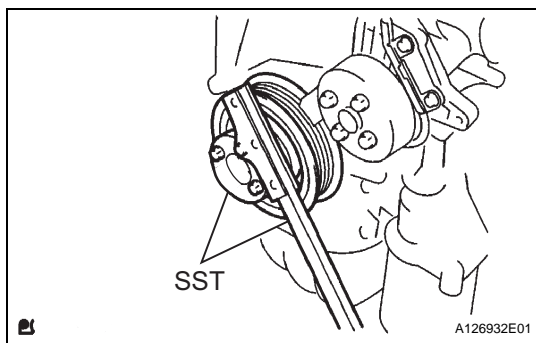
1. INSTALL DRIVE PLATE SUB-ASSEMBLY

- (a) Clean the 8 bolts and 8 bolt holes.
- (b) Apply adhesive to 2 or 3 threads of the 8 bolts.

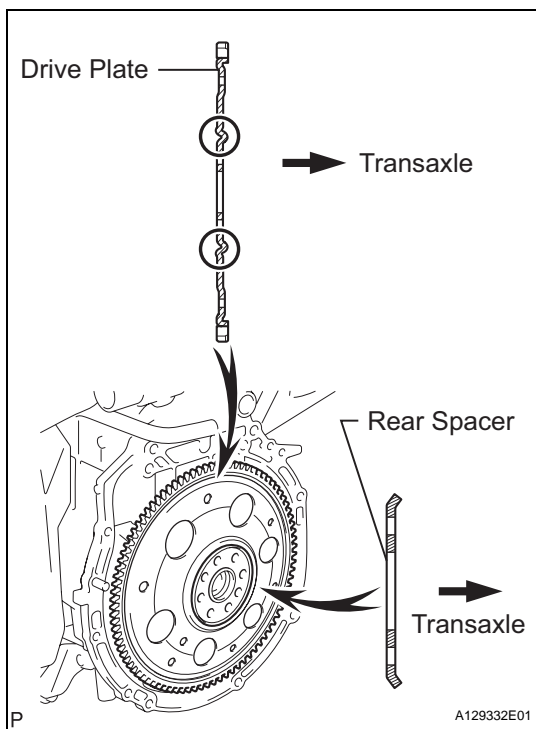
Adhesive:

Toyota Genuine Adhesive 1342, Three Bond 1342 or Equivalent

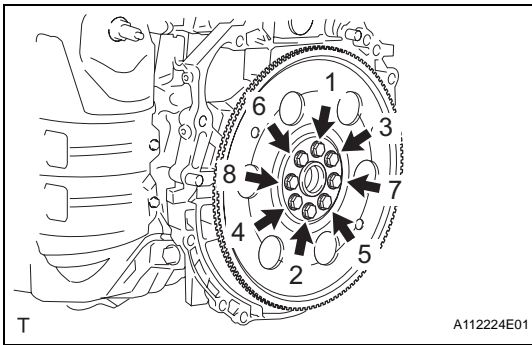
- (c) Using SST, hold the crankshaft.
SST 09213-54015 (91651-60855), 09330-00021



- (d) Install the front spacer.
HINT:
Align the pin of the front spacer with the pin hole of the crankshaft.



- (e) Install the drive plate and rear spacer onto the crankshaft.



- (f) Using several steps, uniformly install and tighten the 8 bolts in the sequence shown in the illustration.
Torque: 98 N*m (1,000 kgf*cm, 72 ft.*lbf)

2. INSTALL TORQUE CONVERTER CLUTCH ASSEMBLY

- (a) Install the torque converter clutch for U241E (2WD) (see page [AX-148](#)).
 (b) Install the torque converter clutch for U140F (4WD) (see page [AX-149](#)).

3. INSTALL AUTOMATIC TRANSAXLE ASSEMBLY

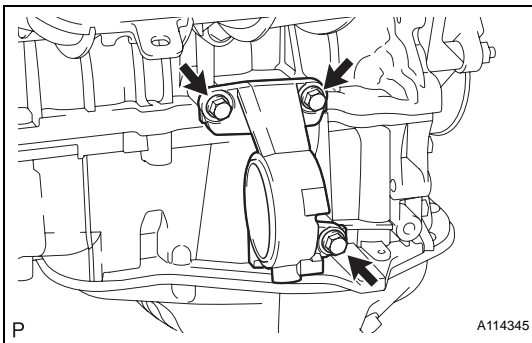
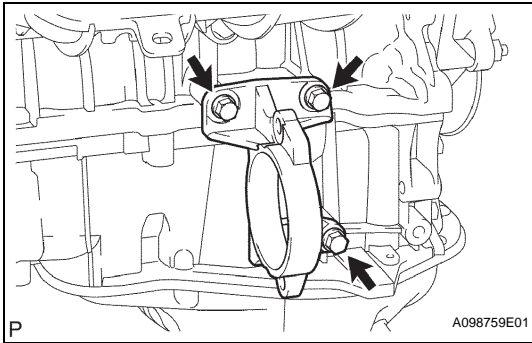
- (a) Install the automatic transaxle for U241E (2WD) (see page [AX-149](#)).
 (b) Install the automatic transaxle for U140F (4WD) (see page [AX-150](#)).

4. INSTALL STARTER ASSEMBLY (See page [ST-14](#))

5. INSTALL TRANSFER ASSEMBLY (for 4WD) (See page [TF-75](#))

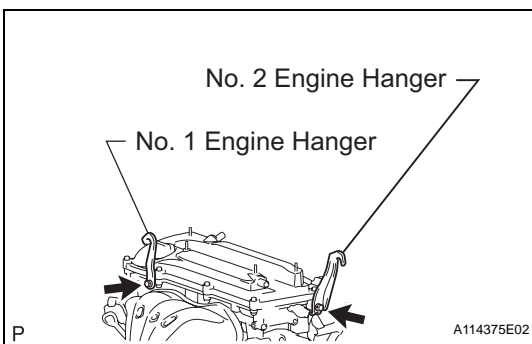
6. INSTALL DRIVE SHAFT BEARING BRACKET (for 2WD)

- (a) Install the bracket with the 3 bolts.
Torque: 64 N*m (653 kgf*cm, 47 ft.*lbf)



7. INSTALL DRIVE SHAFT BEARING BRACKET (for 4WD)

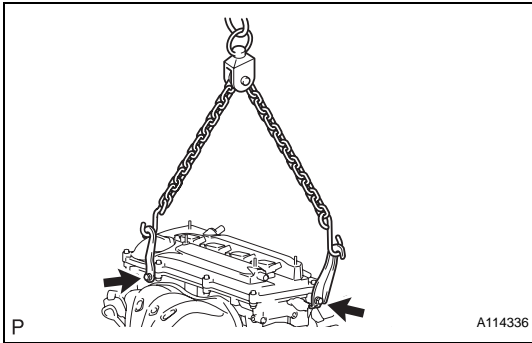
- (a) Install the bracket with the 3 bolts.
Torque: 64 N*m (653 kgf*cm, 47 ft.*lbf)



8. INSTALL ENGINE HANGER

- (a) Install the No. 1 and No. 2 engine hangers.
Torque: 38 N*m (387 kgf*cm, 28 ft.*lbf)
Part No.

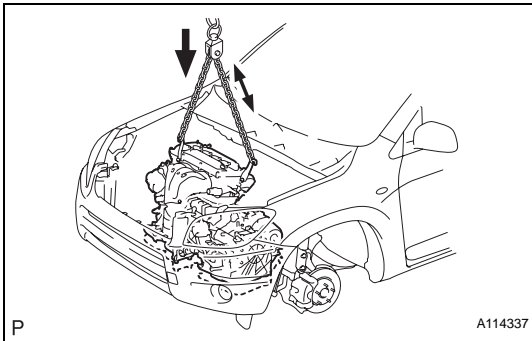
ITEM	Part No.
No. 1 engine hanger	12281-28010
No. 2 engine hanger	12282-28010
Bolt	91512-61020



- (b) Attach the sling device and the engine with the chain block.

9. INSTALL ENGINE ASSEMBLY WITH TRANSAXLE

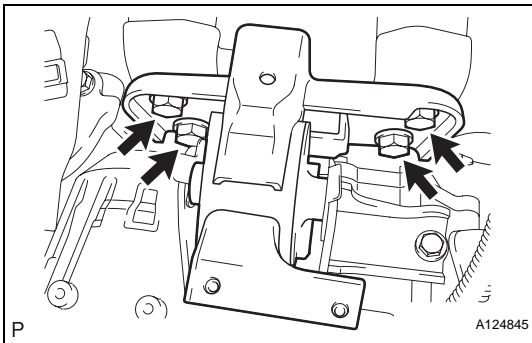
- (a) Lift the engine assembly (with transaxle) with the chain block.



- (b) Lower the engine out of the vehicle slowly and carefully.

NOTICE:

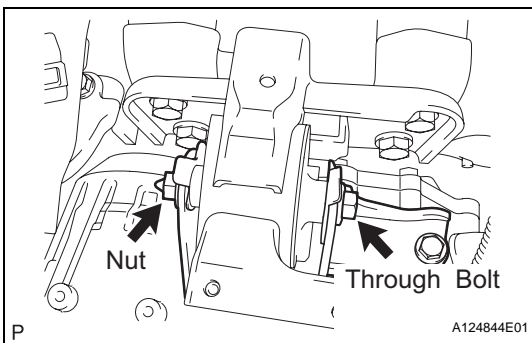
Make sure the engine is clear of all wiring, hoses and cables.



10. INSTALL ENGINE MOUNTING INSULATOR LH

- (a) Install the engine mounting insulator LH with the 4 bolts.

Torque: 95 N*m (969 kgf*cm, 70 ft.*lbf)

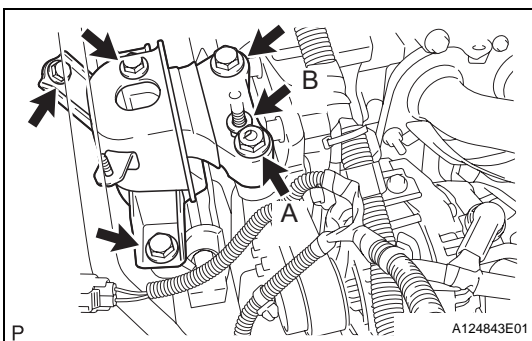


- (b) Install the engine mounting insulator LH with the through bolt and nut.

HINT:

Install the through bolt by tightening the nut.

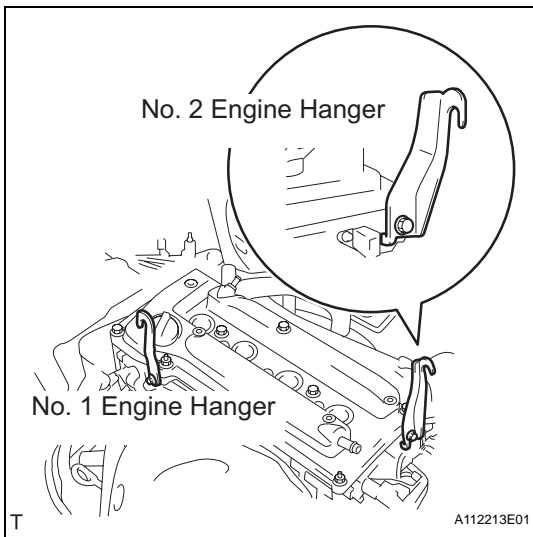
Torque: 56 N*m (571 kgf*cm, 41 ft.*lbf)



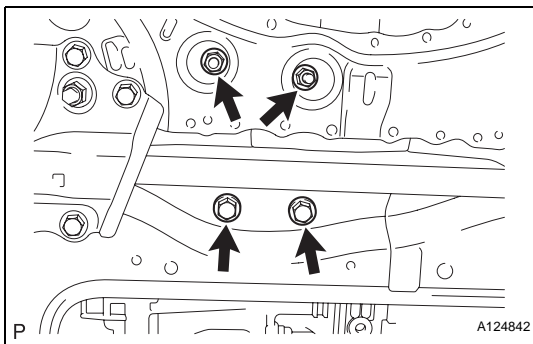
11. INSTALL ENGINE MOUNTING INSULATOR RH

- (a) Install the engine mounting insulator RH with the 2 bolts and 2 nuts.

Torque: 95 N*m (969 kgf*cm, 70 ft.*lbf) for bolt
95 N*m (969 kgf*cm, 70 ft.*lbf) for nut A
52 N*m (530 kgf*cm, 38 ft.*lbf) for nut B

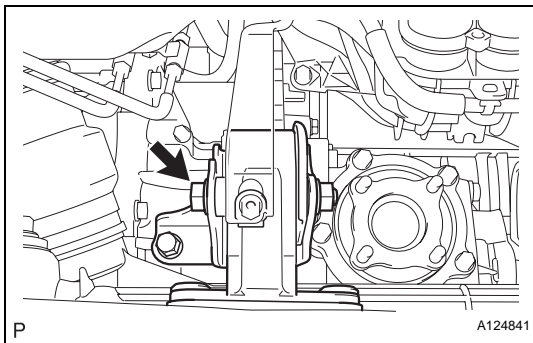
**12. REMOVE ENGINE HANGER**

- (a) Remove the No. 1 and No. 2 engine hangers.

**13. INSTALL ENGINE MOUNTING INSULATOR RR**

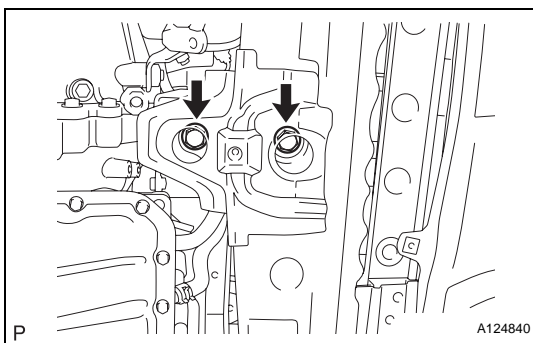
- (a) Install the engine mounting insulator RR with the 2 nuts and 2 bolts.

Torque: 95 N*m (969 kgf*cm, 70 ft.*lbf)



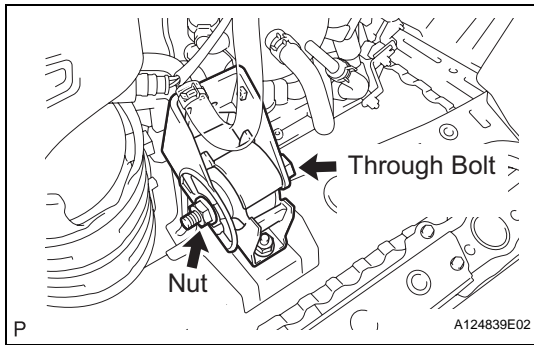
- (b) Install the through bolt which is used to secure the rear engine mounting insulator, into the rear engine mounting bracket.

Torque: 95 N*m (969 kgf*cm, 70 ft.*lbf)

**14. INSTALL ENGINE MOUNTING INSULATOR FR**

- (a) Install the engine mounting insulator FR with the 2 bolts.

Torque: 95 N*m (969 kgf*cm, 70 ft.*lbf)



- (b) Install the through bolt and nut which is used to secure the front engine mounting bracket FR.
HINT:
Install the through bolt by tightening the nut.
Torque: 145 N*m (1,479 kgf*cm, 107 ft.*lbf)

15. INSTALL PROPELLER SHAFT ASSEMBLY (for 4WD)

- (a) Install the propeller shaft (see page [PR-5](#)).

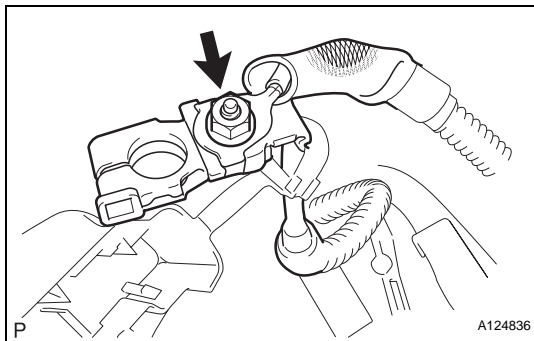
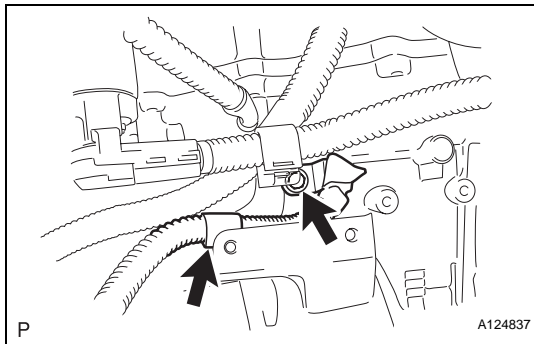
16. INSTALL FRONT DRIVE SHAFT ASSEMBLY

- (a) Install the front drive shaft RH (for 2WD) (see page [DS-32](#)).
(b) Install the front drive shaft RH (for 4WD) (see page [DS-65](#)).

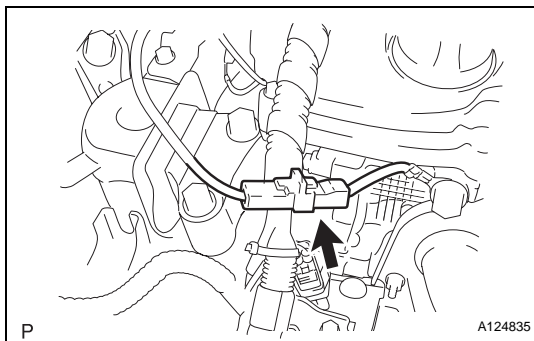
17. INSTALL FRONT EXHAUST PIPE (See page [EX-4](#))

18. CONNECT ENGINE WIRE

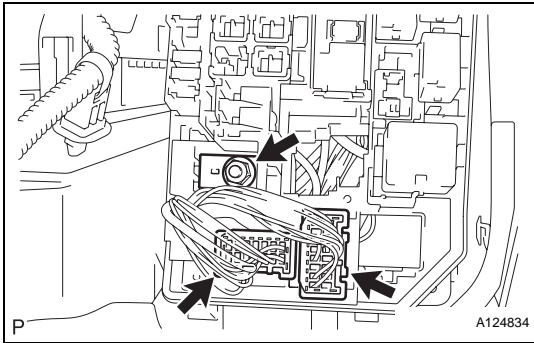
- (a) Install the ground cable with the bolt located near the starter.
Torque: 13 N*m (133 kgf*cm, 10 ft.*lbf)
(b) Connect the ground cable to the clamp located near the starter.



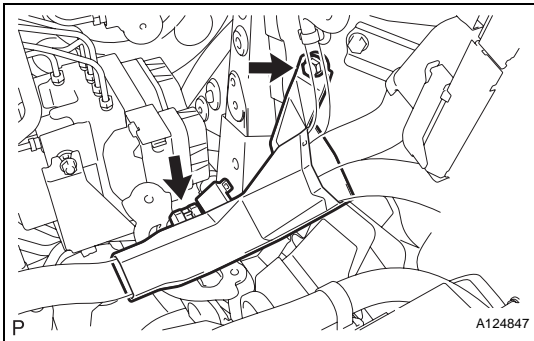
- (c) Connect the engine wire to the positive (+) battery terminal with the nut.
Torque: 13 N*m (133 kgf*cm, 10 ft.*lbf)



- (d) Connect the ground cable connector.

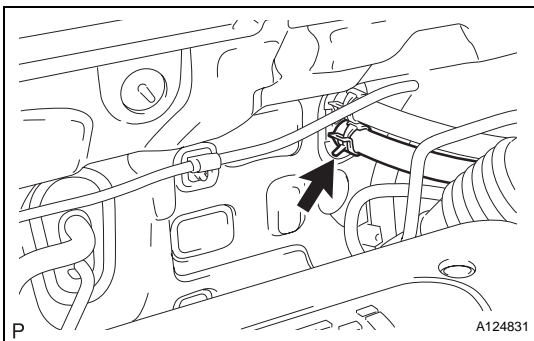


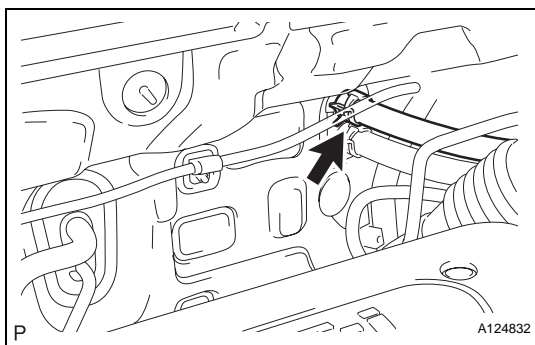
- (e) Connect the 2 engine wire connectors and install the nut.
- (f) Install the engine room relay block cover.



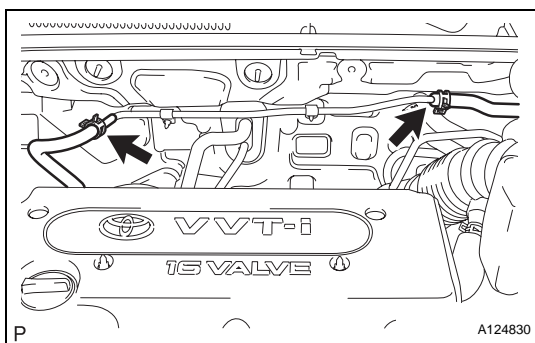
- (g) Attach the clamp of the engine wire cover.
- (h) Install the engine wire cover to with the bolt.

19. **INSTALL ECM** (See page [ES-430](#))
20. **INSTALL COOLER COMPRESSOR ASSEMBLY** (See page [AC-217](#))
21. **INSTALL GENERATOR ASSEMBLY** (See page [CH-15](#))
22. **INSTALL FAN AND GENERATOR V BELT** (See page [EM-7](#))
23. **INSTALL FRONT SUSPENSION MEMBER REINFORCEMENT RH** (See page [EM-7](#))
24. **INSTALL TRANSAXLE CONTROL CABLE ASSEMBLY**
 - (a) Install the transaxle control cable for U241E (see page [AX-130](#)).
 - (b) Install the transaxle control cable for U140F (see page [AX-130](#)).
25. **INSTALL INTAKE MANIFOLD INSULATOR** (See page [ES-421](#))
26. **INSTALL INTAKE MANIFOLD** (See page [ES-421](#))
27. **INSTALL FUEL DELIVERY PIPE SUB-ASSEMBLY** (See page [FU-13](#))
28. **CONNECT NO. 2 VENTILATION HOSE** (See page [FU-14](#))
29. **INSTALL THROTTLE BODY ASSEMBLY** (See page [ES-413](#))
30. **CONNECT FUEL TUBE** (See page [FU-14](#))
31. **CONNECT HEATER WATER OUTLET HOSE**
 - (a) Connect the heater water outlet hose to the air conditioner tube.

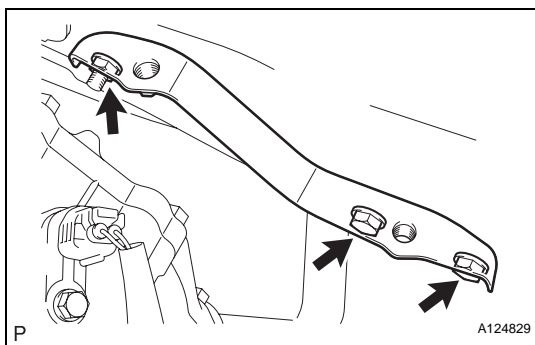


**32. CONNECT HEATER WATER INLET HOSE**

- (a) Connect the heater water inlet hose to the air conditioner tube.

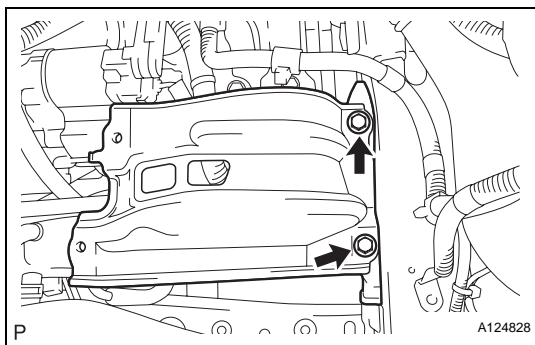
**33. CONNECT UNION TO CONNECTOR TUBE HOSE**

- (a) Connect the 2 union to connector tube hoses to the booster vacuum tube.

**34. INSTALL BATTERY CARRIER BRACKET**

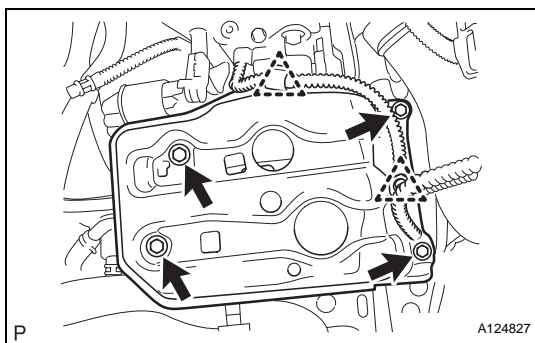
- (a) Install the battery carrier bracket with the nut and 2 bolts.

Torque: 20 N*m (204 kgf*cm, 15 ft.*lbf)

**35. INSTALL BATTERY BRACKET REINFORCEMENT**

- (a) Install the battery bracket reinforcement with the 2 bolts.

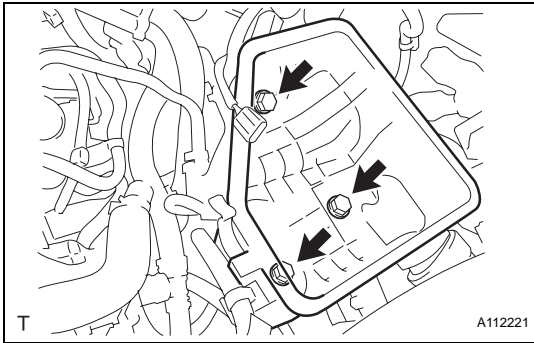
Torque: 20 N*m (204 kgf*cm, 15 ft.*lbf)

**36. INSTALL FRONT BATTERY CARRIER**

- (a) Install the front battery carrier with the 4 bolts.
Torque: 20 N*m (204 kgf*cm, 15 ft.*lbf)
 (b) Connect the 2 clamps of the engine wire.

37. INSTALL AIR CLEANER CASE SUB-ASSEMBLY

- (a) Connect the air cleaner case to the No. 1 air cleaner inlet.

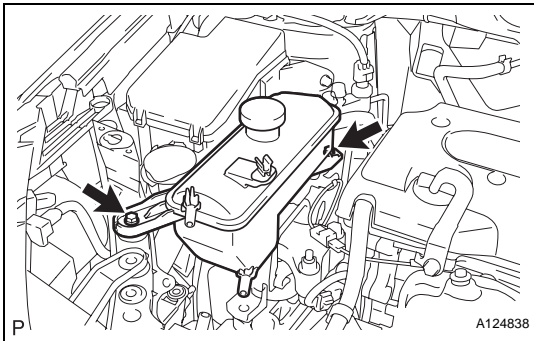


- (b) Install the air cleaner case with the 3 bolts.
Torque: 5.0 N*m (51 kgf*cm, 44 in.*lbf)

38. INSTALL AIR CLEANER FILTER ELEMENT SUB-ASSEMBLY

39. INSTALL AIR CLEANER CAP (See page [ES-413](#))

40. INSTALL PURGE VSV (See page [EC-16](#))



41. INSTALL RADIATOR RESERVOIR

- (a) Install the reservoir with the 2 bolts.
Torque: 5.0 N*m (51 kgf*cm, 44 in.*lbf)

42. INSTALL RADIATOR ASSEMBLY

- (a) Install the radiator (see page [CO-32](#)).

43. INSTALL BATTERY TRAY

44. INSTALL BATTERY

- (a) Install the battery.
(b) Install the battery clamp with the bolt and nut.
Torque: 8.5 N*m (87 kgf*cm, 75 in.*lbf) for bolt
5.0 N*m (51 kgf*cm, 44 in.*lbf) for nut

45. CONNECT CABLE TO NEGATIVE BATTERY TERMINAL

46. ADD AUTOMATIC TRANSAXLE FLUID

- (a) Add automatic transaxle fluid for U241E (2WD) (see page [AX-151](#)).
(b) Add automatic transaxle fluid for U140F (4WD) (see page [AX-152](#)).

47. CHECK FOR FUEL LEAKS (See page [FU-14](#))

48. ADD ENGINE COOLANT (See page [CO-6](#))

49. CHECK FOR ENGINE COOLANT LEAKS

- (a) Check for engine coolant leaks (see page [CO-1](#)).

50. CHECK FOR AUTOMATIC TRANSAXLE FLUID LEAKS

51. ADJUST SHIFT LEVER POSITION

- (a) Adjust the shift lever position for U241E (2WD) (see page [AX-138](#)).
(b) Adjust the shift lever position for U140F (4WD) (see page [AX-138](#)).

52. INSTALL NO. 1 ENGINE COVER (See page [EM-43](#))

53. INSTALL FRONT FENDER APRON RH

54. INSTALL NO. 2 ENGINE UNDER COVER

55. INSTALL NO. 1 ENGINE UNDER COVER

56. INSTALL FRONT WHEEL

57. INSTALL RADIATOR SUPPORT OPENING COVER

58. INSTALL HOOD SUB-ASSEMBLY

- (a) Install the hood (see page [ED-7](#)).
- (b) Adjust the hood (see page [ED-5](#)).

59. INSPECT AND ADJUST FRONT WHEEL ALIGNMENT

- (a) Inspect and adjust the front wheel alignment (see page [SP-3](#)).

60. PERFORM REGISTRATION

- (a) When replacing the engine assembly, perform vehicle stability control system recognition in ECM (see page [CC-12](#)).

61. RESET MEMORY (for Automatic Transaxle)

- (a) When replacing the engine assembly, perform the RESET MEMORY procedure (A/T initialization) for U241E (2WD) (see page [AX-18](#)) and for U140F (4WD) (see page [AX-18](#)).